

Claim listing

1. (Currently Amended) A self-tightening retaining system for securing a closure at an installed position within a bore, said bore in a portion of a housing, said closure in said installed position closes the bore, ~~said portion of said housing formed as single unitary piece~~, said bore having screw threads along at least a portion of the bore and said closure having an internally threaded hole extending into the closure, the system comprising:

a retaining cover for obstructing removal of said closure from said bore, the cover being receivable in the bore in a position generally adjacent the closure and having external threads interengageable with said screw threads of the bore such that the cover is rotatable relative to the housing in a tightening direction for movement of the cover into the bore toward the closure and rotatable in an opposite, loosening direction for movement of the cover out from the bore away from the closure, the cover having a central axis of rotation; and

a locking device configured for being secured to the cover such that the locking device rotates together with the cover about said central axis, the locking device comprising a fastener receivable in said hole of the closure and having external threads interengageable with threads of the hole;

wherein the threads of the cover and the threads of the fastener are spiraled in opposite directions such that when the cover rotates in the loosening direction, the fastener becomes tightened in the hole of the closure thereby stopping the rotation.

2. (Previously Presented) A self-tightening retaining system as set forth in claim 1 wherein the cover has right-hand threads and the fastener has left-hand threads.

3. (Previously Presented) A self-tightening retaining system as set forth in claim 1 wherein said housing is a pump housing and said retaining cover is a pump access port cover.

4. (Previously Presented) A self-tightening retaining system as set forth in claim 1 further comprising a central opening extending through the cover defining an internal wall along the opening.

5. (Previously Presented) A self-tightening retaining system for securing a closure at an installed position within a bore of a housing to close the bore, said bore having screw threads along at least a portion of the bore and said closure having an internally threaded hole extending into the closure, the system comprising:

a retaining cover for obstructing removal of said closure from said bore, the cover being receivable in the bore in a position generally adjacent the closure and having external threads interengageable with said screw threads of the bore such that the cover is rotatable relative to the housing in a tightening direction for movement of the cover into the bore toward the closure and rotatable in an opposite, loosening direction for movement of the cover out from the bore away from the closure, the cover having a central axis or rotation; and

a locking device configured for being secured to the cover such that the locking device rotates together with the cover about said central axis, the locking device comprising a fastener receivable in said hole of the closure and having external threads interengageable with threads of the hole;

wherein the threads of the cover and the threads of the fastener are spiraled in opposite directions such that when the cover rotates in the loosening direction, the fastener becomes tightened in the hole of the closure thereby stopping the rotation wherein the locking device further comprises a locking member receivable in said central opening of the cover, the locking member having a size and shape configured for engagement with an internal wall of the cover for preventing the cover and locking member from being rotated in different radial directions at the same time.

6. (Previously Presented) A self-tightening retaining system set forth in claim 5 wherein the locking member has a polygonal shape.

7. (Previously Presented) A self-tightening retaining system as set forth in claim 6 wherein the locking member comprises a nut.

8. (Previously Presented) A self-tightening retaining system set forth in claim 7 wherein said fastener comprises a threaded bolt extending through the nut.

9. (Previously Presented) A self-tightening retaining system as set forth in claim 8 wherein the bolt is aligned with said central axis of rotation of the cover.

10. (Previously Presented) A self-tightening retaining system as set forth in claim 1 in combination with the closure.

11. (Previously Presented) A self-tightening retaining system as set forth in claim 10 wherein the closure comprises a plug having a circumferential seal engageable with the bore to close the bore.

12. (Previously Presented) A self-tightening retaining system as set forth in claim 11 wherein the bore of the housing has an internal shoulder and the closure further comprises an annular flange which engages the shoulder when the closure is at said installed position.

13. (Previously Presented) A self-tightening retaining system as set forth in claim 12 further comprising a stop for preventing rotation of the closure relative to the housing.

14. (Previously Presented) A self-tightening retaining system as set forth in claim 13 wherein the flange on the closure has at least one notch therein and when the closure is at said installed position, the stop is received in the notch.

15. (Previously Presented) A method of locking a closure at a sealing position within a bore of a pump housing, the method comprising the steps of:

installing a retaining cover in said bore adjacent said closure, the cover having screw threads interengageable with screw threads of the bore such that the cover is rotatable relative to the housing in a tightening direction and an opposite, loosening direction, the cover having a central axis of rotation, said step of installing comprising rotating the cover about said axis in said tightening direction;

securing a locking device to the cover such that the locking device and cover cannot be rotated in opposite directions about said central axis at the same time;

and threading a fastener into a threaded hole in the closure to secure the fastener to the closure, the fastener and hole of the closure having screw threads spiraled in opposite direction to the screw threads of the cover and bore such that when the cover rotates in the loosening direction, the fastener becomes tightened in the hole of the closure thereby stopping the rotation.